

CLAIMS

1. An on-board power system for a motor vehicle with a large number of consumers and at least one central electronic system housed in a box (3, 4), wherein the consumers are connected with this at least one central electronic system, and with a body bulkhead (1) between the engine compartment and the passenger cabin, characterized in that the at least one central electronic system housed in the box (3, 3') is located at least close to the body bulkhead (1, 1') on the passenger cabin side, and that at least one sealed splitter (passthrough) (1a) is provided for the connecting cables running from the connectors on the box (3) for the central electronic system to the consumers in the engine compartment.
2. The on-board power system according to claim 1, characterized in that the at least one box (3) is mounted flush and directly on the body bulkhead (1), and that the at least one splitter (passthrough) (1a) faces a side of the box (3) that is furnished with connectors, and that the connecting cables for the engine compartment are connected to these connectors.
3. The on-board power system according to claim 1, characterized in that at least one sealed splitter (passthrough) (1a) that is furnished with connectors on both sides is located in the body bulkhead (1), the connectors on the one side of the splitter connecting the cables to the consumers, and on the other side connecting short connecting cables to the connectors on box (3).
4. The on-board power system according to any of claims 1 to 3,

characterized in that  
two boxes for the two sides of the vehicle are arranged on the  
bulkhead (1).

- 5     5.     The on-board power system according to any of claims 1 to 4,  
characterized in that  
at least one further box (4), preferably two boxes (4l, 4r) for the  
two sides of the vehicle, are arranged in the rear space,  
particularly on the rear bulkhead (2),.

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6.     The on-board power system according to any of claims 1 to 5,  
characterized in that  
as well as the central electronic system, switching means for the  
fuse and distribution function (SP boxes) are also integrated in the  
15     box (3)/boxes (3, 4), and preferably protect all low and high  
current circuits to the adjacent consumers in the SP box.

7.     The on-board power system according to claim 6,  
characterized in that  
20     the signal and power circuits originate from the SP box (3)/SP  
boxes (3, 4).

8.     The on-board power system according to either of claims 5 or 6,  
characterized in that  
25     the outputs from the connecting cables are protected by switches  
(Mosfets and/or relays) (26, 27) and/or reversible fuses  
(polyswitches) (36).

9.     The on-board power system according to any of claims 6 to 8,  
30     characterized in that  
the individual SP boxes (3, 4) serve all the functions of the  
neighboring space.

10. The on-board power system according to any of claims 1 to 9,  
characterized in that  
the connectors on box (3)/boxes (3, 4) are constructed as plugs (5,  
5 6) and/or as direct contacts (12).
11. The on-board power system according to claim 10,  
characterized in that  
one side of each of the boxes (3, 4) is furnished with plugs (5, 6),  
10 and the other side is furnished with direct contacts (12).
12. The on-board power system according to any of claims 1 to 11,  
characterized in that  
each of the boxes (3, 4) is connected to the respectively adjacent  
15 consumers and sensors.
13. The on-board power system according to any of claims 6 to 12,  
characterized in that  
an energy storage device is connected to at least one of the SP  
20 boxes (3).
14. The on-board power system according to claim 13,  
characterized in that  
the energy storage device and the associated SP box (3) that are  
25 used to start the engine are situated close to the engine, and that  
the generator (G) is connected to this energy storage device.
15. The on-board power system according to claims 13 or 14,  
characterized in that  
30 this SP box (3) assigned to the energy storage device supplies  
current to the other SP boxes (4).

16. The on-board power system according to any of claims 5 to 15,  
characterized in that  
the front SP box(es) (13) distribute the current for the rear space  
(inside and trunk) and provide electrical protection therefor.
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17. The on-board power system according to any of claims 6 to 16,  
characterized in that  
a second battery (backup battery) is housed in the rear section of  
the vehicle and is connected to the SP box that is located there.
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18. The on-board power system according to any of claims 6 to 17,  
characterized in that  
one SP box assumes the master function in the software structure  
and the other SP boxes assume slave functions (i.e. they only  
receive signals and actuate consumers).
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19. The on-board power system according to claim 18,  
characterized in that  
the slave boxes include an emergency program for minimum  
processing in the event that the master SP box fails.
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